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Editorial

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The last couple of months have witnessed renewed debate and discussion with respect to the possible use of chemical weapons. In an unprecedented event Syria witnessed a chemical weapons attack on August 21, 2013 in a district around Damascus. It was reported that Sarin gas was used in this attack.

In this issue Dany Shoham in his article discusses and compares the existing Chemical Weapons and Biological Weapons capabilities of Egypt and Syria. H. R. Naidu Gade discusses the accomplishments made by the Challenge Inspection Regime of the Chemical Weapons Convention (CWC) towards handling of concerns of the state parties vis-à-vis other member states. Vineeth Krishnan highlights the success of the Montreal Protocol as an important international treaty mechanism.

The Kaleidoscope section by Saloni Salil covers the ways and means of safely destroying sea-dumped chemical weapons.

This issue also features other regular sections like the Chemical and Biological News and Book Review.

Contributions and feedback are welcome and can be addressed to: editorcbw@gmail.com

Challenge Inspection Regime of the CWC: Salient Features*

Col. (Retd) H. R. Naidu Gade

The author has four decades of experience in the fields of CBRNe and Counter IEDs, was the Chief CW Inspector with the OPCW for nearly a decade. He led numerous verification missions to CW Facilities and monitored destruction of CW around the globe.

Summary

The most significant aspect of the CWC is the provision for a Challenge Inspection (CI) mechanism, to address any possible concerns of any member state regarding the possible non-compliance to the provisions of the CWC by any other member state.

* This article is based on the Article IX of the CWC. For details see http://www.opcw.org/chemical-weapons-convention/articles/article-ix-consultations-cooperation-and-fact-finding/

Introduction

The Chemical Weapons Convention 1993 (CWC) entrered into force (EIF) in April 1997 and presently has 190 members covering nearly 98% of the world population. The Organisation for Prohibition of Chemical Weapons (OPCW) is the watchdog body for the CWC. Even then, in the past, there have been instances wherein the CWC provisions were violated by some of the member states. As a consequence, disarmament critics have been skeptical and apprehensive of the effectiveness of the Convention on the possible non-compliance by some member states despite having voluntarily joined the CWC.

Provisions For Challenge Inspection (CI)

The most significant aspect of the CWC is the provision for a Challenge Inspection (CI) mechanism, to address any possible concerns of any member state regarding the possible non-compliance to the provisions of the CWC by any other member state. The Convention provides for a graduated and systematic approach and mechnism for addressing these concerns.

Consultation & Cooperation

As a first step, States Parties to the Convention can consult and cooperate, directly among themselves, or through the Organization on any matter which may be raised relating to the object and purpose, or the implementation of the provisions, of the Convention. States Parties should, whenever possible, first make every effort to clarify and resolve, through exchange of information and consultations among themselves, any matter which may cause doubt about compliance

with this Convention, or which gives rise to concerns about a related matter which may be considered ambiguous. A State Party which receives a request from another State Party for clarification of any matter which the requesting State Party believes causes such a doubt or concern shall provide the requesting State Party as soon as possible, with information sufficient to answer the doubt or concern raised along with an explanation of how the information provided resolves the matter.

Procedure For Requesting Clarification

Clarification

A State Party shall have the right to request the OPCW to assist in clarifying any situation which may be considered ambiguous or which gives rise to a concern about the possible non-compliance of another State Party with this Convention. The OPCW shall provide appropriate information in its possession relevant to such a concern. In such a case, the OPCW shall forward the request for clarification to the State Party concerned. The requested State Party shall provide the clarification to the OPCW as soon as possible.

The OPCW shall take note of the clarification and forward it to the requesting State Party. If the requesting State Party deems the clarification to be inadequate, it shall have the right to request the OPCW to obtain from the requested State Party further clarification; For the purpose of obtaining further clarification the OPCW may call on to establish a group of experts from the Technical Secretariat (TS), OPCW, or from elsewhere, to examine all available information and data relevant to the situation causing the concern. The group of experts shall submit a factual report to the OPCW on its findings.

Request for Special Session of EC and CSP

If the requesting State Party considers the clarification obtained to be unsatisfactory, it shall have the right to request a special session of the Executive Council (EC) in which States Parties involved that are not members of the EC shall be entitled to take part. In such a special session, the EC shall consider the matter and may recommend any measure it deems appropriate to resolve the situation. A State Party shall also have the right to request the EC to clarify any situation which has been considered ambiguous or has given rise to a concern about its possible non-compliance with this Convention. The EC shall respond by providing such assistance as appropriate.

If the doubt or concern of a State Party about a possible non-compliance has not been resolved within 60 days after the submission of the request for clarification to the EC, or it believes its doubts warrant urgent consideration, notwithstanding its right to request a CI, it may request a special session of the Conference of States Party (CSP). At such a special session, the Conference shall consider the matter and may recommend any measure it deems appropriate to resolve the situation.

CWC: Procedures For Requesting Challenge Inspection

Each State Party has the right to request an on-site CI of any facility or location in the territory or in any other place under the jurisdiction or control of any other State Party for the sole purpose of clarifying and resolving any questions concerning possible non-compliance with the provisions of this Convention, and to have this inspection conducted anywhere without delay by an inspection team designated by the Director

General (DG), OPCW and in accordance with the CWC.

Each State Party is under the obligation to keep the inspection request within the scope of this Convention and to provide in the inspection request all appropriate information on the basis of which a concern has arisen regarding possible non-compliance with this Convention as specified in the Convention. Each State Party shall refrain from unfounded inspection requests, care being taken to avoid abuse. The CI shall be carried out for the sole purpose of determining facts relating to the possible non-compliance.

Access to the Inspection Team

For the purpose of verifying compliance with the provisions of this Convention, each State Party shall permit the technical secretariat to conduct the on-site CI. Pursuant to a request for a CI of a facility or location, and in accordance with the procedures provided, the inspected State Party shall have the right and the obligation to make every reasonable effort to demonstrate its compliance with this Convention and, to this end, to enable the IT to fulfil its mandate, the obligation to provide access within the requested site for the sole purpose of establishing facts relevant to the concern regarding possible non-compliance, and the right to take measures to protect sensitive installations, and to prevent disclosure of confidential information and data, not related to this Convention.

Observer on CI

The requesting State Party may, subject to the agreement of the inspected State Party, send a representative who may be a national either of the requesting State Party or of a third State Party, to observe the conduct of the CI. The inspected State Party shall then grant access to the observer. The inspected State Party shall, as a rule, accept the proposed observer, but if the inspected State Party exercises a refusal, that fact shall be recorded in the final report.

CI Request

The requesting State Party shall present an inspection request for an on-site CI to the EC and at the same time to the DG for immediate processing. The DG shall immediately ascertain that the inspection request meets the requirements specified in the Convention, and, if necessary, assist the requesting State Party in filing the inspection request accordingly. When the inspection request fulfils the requirements, preparations for the CI shall begin. The DG shall transmit the inspection request to the inspected State Party not less than 12 hours before the planned arrival of the inspection team at the point of entry. After having received the inspection request, the EC shall take cognizance of the DG's actions on the request and shall keep the case under its consideration throughout the inspection procedure. However, its deliberations shall not delay the inspection process.

Consideration by EC

The EC may, not later than 12 hours after having received the inspection request, decide by a three-quarter majority of all its members against carrying out the CI, if it considers the inspection request to be frivolous, abusive or clearly beyond the scope of the CWC. Neither the requesting nor the inspected State Party shall participate in such a decision. If the EC decides against the challenge inspection, preparations shall be stopped, no further action on the inspection request shall be taken, and the States Parties concerned shall be informed accordingly.

Inspection Mandate

The DG shall issue an inspection mandate for the conduct of the CI. The inspection mandate shall be the inspection request put into operational terms, and shall conform to the inspection request. The CI shall be conducted in accordance with the Convention. The inspection team shall be guided by the principle of conducting the CI in the least intrusive manner possible, consistent with the effective and timely accomplishment of its mission. The inspected State Party shall assist the inspection team throughout the CI and facilitate its task. If the inspected State Party proposes any arrangements to demonstrate compliance with this Convention or an alternative to full and comprehensive access, it shall make every reasonable effort, through consultations with the inspection team, to reach an agreement on the modalities for establishing the facts with the aim of demonstrating its compliance.

CI Report

The final CI report shall contain the factual findings as well as an assessment by the inspection team of the degree and nature of access and cooperation granted for the satisfactory implementation of the challenge inspection. The DG shall promptly transmit the final report to the requesting State Party, to the inspected State Party, to the EC and to all other States Parties. The DG shall further transmit promptly to the EC the assessments of the requesting and of the inspected States Parties, as well as the views of other States Parties which may be conveyed to the DG for that purpose, and then provide them to all States Parties.

Review of Report

The EC shall, in accordance with its powers and functions, review the final report of the inspection team as soon as it is presented, and address any concerns as to whether any non-compliance has occurred; whether the request had been within the scope of this Convention; and whether the right to request a challenge inspection had been abused. If the EC reaches the conclusion, in keeping with its powers and functions, that further action may be necessary, it shall take the appropriate measures to redress the situation and to ensure compliance with this Convention, including specific recommendations to the CSP. In the case of abuse, the EC shall examine whether the requesting State Party should bear any of the financial implications of the CI. The requesting State Party and the inspected State Party shall have the right to participate in the review process. The EC shall inform the States Parties and the next session of the CSP of the outcome of the process. If the EC has made specific recommendations to the Conference, the CSP shall consider action in accordance with Convention.

Conclusion

It goes to the credit of member States, that the OPCW has not received any requests for clarifications or for CI in last 16 years of existence of the CWC. It only reflects the mutual confidence and trust between the member states and the excellent role being played by the OPCW to facilitate this trust. In appreciation of its great efforts in chemical disarmament and nonproliferation, the OPCW was bestowed with the Nobel Peace Prize for the year 2013.

Chemical and Biological Weapons in Egypt and Libya

Dr. Dany Shoham

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Summary

Egypt has for long possessed chemical weapons (CW) and biological weapons (BW), and was unable to make much progress in the nuclear weapons (NW) domain, at least as yet, Qaddafi's Libya on the other hand produced CW, developed BW, neared nuclear capacity as well, eventually, but shifted to total deproliferation in due course.

Apart from South Africa, Egypt and Libya appear to be the most important countries in the African continent, in terms of Weapon of Mass Destruction (WMD) proliferation and deproliferation processes. While Egypt has for long possessed chemical weapons (CW) and biological weapons (BW), and was unable to make much progress in the nuclear weapons (NW) domain, at least as yet, Qaddafi's Libya on the other hand produced CW, developed BW, neared nuclear capacity as well, eventually, but shifted to total deproliferation in due course. This article is intended to outline the significant characteristics and milestones marking the two countries in those respects.

Egypt

In historical perspective, Egypt was the first Arab country to equip itself with CW and BW. It was also the first to utilize CW (in Yemen in the 1960s). Egypt did not join the CW Convention (CWC) and the Biological Weapons Convention (BWC), and continues to maintain its chemical and biological capabilities. While frequently accentuating the essentiality of the Middle East being free of whatever WMD, Egyptian spokesmen often emphasized that the acquisition of CW and BW is necessary and completely justified, as opposed to Israel's nuclear and sub-nuclear WMD capabilities.[1]

That stance is as well valid presently. It traces back to the preparation for the international convention for the prohibition of CW (January 1993), and especially to its wake. The consolidation of a pan-Arabic approach was obvious - with Egypt in the lead - calling for withholding signatures from the chemical convention - and implicitly supporting the maintenance of an offensive chemical and biological capability, as is the

practice in Egypt itself - as long as a comprehensive ban on chemical, biological and nuclear weapons in the Middle East is not implemented. That posture is fairly understandable, in principle. Egypt's then Foreign Minister Amr Moussa, even stressed that this issue constitutes a main topic in the reorganization of the regional alignment in the Middle East. In January 1993, when the chemical convention was signed, President Mubarak was in Damascus, and together with Assad, called upon the Arabs to refrain from joining the convention.

Egypt cooperated with Iraq as well, foremost technologically, within that context. Until 1990, collaboration between Egypt and Iraq flourished, with respect to ballistic armament, CW and BW; shortly before the Iraqi invasion of Kuwait, Egypt's foreign and defense ministers rallied to the defense of Iraq's acquisition of CW and BW, apparently in anticipation of joint Iraqi-Egyptian benefit. The Iraqi invasion of Kuwait brought about an enormous geopolitical vortex, nevertheless.

On the basis of Egypt's vast expenditures, as far as its military buildup is concerned - in addition to its geo-strategic key position and persisting decision not to join the accords preventing the proliferation of CW and BW - it would seem reasonable to assume that this buildup does include CW and BW, particularly that NW are out of reach for Egypt, thus far.[2]

Chemical weapons

The Egyptian acquisition of CW began in the early 1960s, and only barely preceded its implementation by the Egyptian Air Force in the Yemen war from 1963-1967. The primary facility is located in Abu-Za`abal (supported by neighboring insecticide and pharmaceutical plants), and secondary facilities are located in Abu-Rawash (the assembly point for filling aerosol cans) and adjacent to Beni-Suaif (an Air Force base). A primary research and development facility is located in the National Research Center in Cairo, and a supportive production line functions within the framework of the Egyptian company for Dyestuffs and Chemicals.[3]

Egypt first produced mustard (blistering gas) and phosgen (asphyxiation gas), which were also employed in Yemen. Subsequently, Egypt moved to producing psychotomimetic incapacitating agents, sarin nerve gas and later VX nerve gas. All these were manufactured in industrial quantities and were loaded onto land mines, artillery shells, aerial bombs, rockets (including cluster-tipped rockets) and finally onto missile warheads. After the Egyptian-Iraqi-Argentinian “Condor” missile programme was frozen, which was designed for chemical and biological armament from the Egyptian and Iraqi perspectives, Egypt turned to arming alternative missiles, and that armament effort has most likely been accomplished.[4]

Egypt conducted a national trial challenge inspection exercise on a chemical plant in its own country and reported on it to the Conference of Disarmament, without exposing the plant. The Egyptian representative noted in his report that “Egypt does not possess or produce CW”, although “the inspected plant is definitely capable of producing CW of all types” - a purposeful claim designed to create uncertainty and obfuscate the distinction between production capacity and actual manufacturing. In contrast, and at about the same time (1991), Egypt claimed that “in the past it possessed a large supply of CW, but at present its CW production is limited to that which is necessary to ensure defensive and deterrence capabilities”; in other words,

indirect Egyptian admission of the existence of CW in its possession and its production.[5]

Biological weapons

In the early 1960s, Egypt embarked on an integrated CW and BW project which was code-named "Izlis". It was implemented in a military-civilian consortium located in Abu-Za`abal which includes a military installation numbered as 801, a civilian installation called "The Abu-Za`abal Company for Chemicals and Insecticides", and an additional civilian installation called "The El-Nasser Company for Pharmaceutical Chemicals and Antibiotics". The latter plant provides, in conjunction with its large-scale real civilian pharmaceutical and biotechnological activities, a cover for military activity in the field of BW.[6]

Egypt signed the BWC in 1972, but did not ratify the treaty afterwards. Incidentally, Egyptian president Anwar Sadat first announced the existence of BW in Egyptian possession in 1970, when he was still vice-president, and once again in 1972 when he was already president; “We have the instruments of biological warfare in the refrigerators”.[7] It seems that in the early 1970s, a decade after the BW project's inception, and after the massive stockpiling of operational CW and their implementation in Yemen, Egypt stockpiled biological warfare agents in operational quantities alongside the means to deliver them. While, the existence of CW in Egypt's possession was already a public knowledge, Sadat's statement acknowledged the regime's perspective on BW as an effectual means of deterrence.

Later on, Sadat[8] and his Chief of Staff[9] declared that Egypt possesses a genuine mass destruction capability which includes sufficient biological and CW, though not nuclear weapons. Indeed, throughout the 1970s, Egypt significantly intensified its activity in the field of BW, and during the 1980s, worked in close cooperation with Iraq in the development of biological warfare agents.[10]

A variety of biological warfare agents have indeed been researched by Egypt, including the germs causing plague, anthrax, brucellosis, and Q fever, encephalitis viruses, Rift Valley virus, botulinum toxin, mycotoxins and other pathogens and toxins; some of those pathogens and toxins were developed to the level of operational BW.[11] The biotechnological and biomedical infrastructures found in Egypt attest such accomplishment. A further dimension was added in the form of the highly pathogenic H5N1 avian influenza virus that became, uniquely to Africa, endemic in Egypt during the recent decade. Although entirely legitimate, the intensive and extensive coping with this virus, scientifically and practically, inevitably makes it a pathogen of military potential.[12]

Egyptian strategists, who have dealt with the issues relating to the Israeli-Arab balance of power, have repeatedly emphasized the importance of both biological and CW as vital components of Arab and Egyptian armament efforts. This understanding on the utility of these weapons still persists, concomitant with the lasting and relatively stable peace between Egypt and Israel.

Libya

In comparison to Egypt, the case of Libya is much different. Libya represents the first case of a deproliferation process, which it voluntarily undertook, in December 2003. Indeed, there is are variety of factors - geostrategic, political and personal - that together propelled and fueled this

outstanding move conducted by Qaddafi, who for many years was one of the most radical anti-Western leaders who also sought WMD and supported terrorist activities of various hues. As a matter of fact, since the early 1980s, he persistently - though not very effectively - pursued WMD, chemical, biological and nuclear strategies, all at the same time.[13]

It so happened that this enduring course shaped by Qaddafi continuously brought about an opposing American-British endeavor aimed at hindering any Libyan progress in the WMD domain. Tirelessly and variedly being conducted, that endeavor eventually brought about the desired outcome, and Libya became fully committed to not just inspections and control but rather to a totally unlimited deproliferation process, pertaining to any item included or in support of its WMD programmes, in whatever place and sense.

At first, Libya let the US and British experts, and later on UN inspectors, explore any facility they wanted to. It declared, showed and handed over whatever it was requested to; equipment, material, munitions and documents. It fully cooperated so as to destruct stockpiles, components and other items. Moreover, it disclosed much information about its WMD-related technological interfaces with Iraq, Iran, Syria and Pakistan. Invaluable intelligence assets have thus been achieved.

Libya exhibited, at any rate, a degree of daring within that context. Increasing, indirect pressure was imposed upon Qaddafi during 2003, while his son and head of intelligence were having intensifying contacts with the US and Britain. Yet eventually, Qaddafi could equally choose to carry on with WMD procurement, and to disclose the WMD-oriented interfaces with Libya's Muslim sisters. His elderly soberness, however, apparently turned dominant, especially since he witnessed the fate of Iraq and Saddam Hussein.

Otherwise, Libya would very slowly - but consistently - make progress towards acquisition of biological and nuclear weapons, in addition to CW. Such development could have not been tolerated, and hence the preemptive efforts made by the US and Britain. If abortive, those efforts would leave Libya essentially unharmed, approaching its primary goal, one way or another. Earlier, Qaddafi had indeed emphasized many times that Libya had every right to equip itself with non-conventional weapons.[14] Notably, before having its own CW, in 1987, Libya employed CW supplied to her by Iran, against Chad.[15]

Chemical weapons

The Libyan inventory

On January 6, 2004, less than three weeks after Qaddafi's 19 December statement on deproliferation, Libya deposited its instrument of accession to the CWC with the UN in New York. Thirty days later, on February 5, 2004, Libya officially became a state party to the CWC and was required to submit a complete initial declaration of its CW programme within thirty days.

The items declared and uncovered included;

- CW stockpile consisting of approximately 23 metric tons of mustard gas (reportedly produced a decade ago),
- Some 2000 artillery shells and 1500 aerial bombs to be filled with this chemical warfare agent on short notice (much more bombs were later revealed - detailed below),
- Two CW storage facilities,

- 1,300 metric tons of precursor chemicals needed to produce nerve gases,[16]

- 14 filing boxes filled with documents - some in Arabic, some in English. Two of the boxes carried a reference to the German-built ostensibly pharmaceutical facility at Rabta ,[17]

- One inactivated CW production facility; namely, a dual-use capacity to produce mustard gas and nerve agents, in terms of equipment in storage that could outfit a backup CW production line to reinforce or replace the Rabta facility. Beyond mustard manufacturing, Libya is thought to have carried out research to produce two nerve agents, meaning sarin and soman.[18]

Notably, the sole delivery system that Libya domestically devised for its stockpile of mustard gas was a 254-kilogram aerial bomb that was shaped to be carried on the external wing racks of a fighter-bomber. Each bomb had an explosive buster tube running down its central axis, surrounded by a hexagonal array of six cylinders. The cylinders were resized so that eight 1-liter plastic canisters filled with mustard agent could fit snugly inside. Thus, a single bomb held a total of 48 liters of mustard. When the bomb hit the ground, an impact fuse in the nose would cause the central burster-tube to explode, dispersing the mustard agent as a cloud of droplets and vapor. In peacetime, however, Libya stored the empty bomb casings separately from the stockpile of mustard agent, intending to fill the weapons prior to use. In addition to the 1500 declared aerial bombs, more than 2000 bombs were disclosed by the Libyans in actuality.[19]

Facilities

The Rabta complex was founded as a "Technology Center" by an Iraqi specialist, Dr. Ihsan Barbouty, an architect by profession, possessing huge European-based companies, already serving the Iraqi CW programme. It included a war gases production plant camouflaged as a pharmaceutical project and built by Dr. Urgen Hipenstil Imhauzen, a German chemist owning the firm Imhauzen Chemei. Besides, a CW munitions factory was built at the Rabta compound, separate from the chemical warfare agent plant. For its construction, assistance was afforded by certain Japanese firms. US officials learned that Japan Steel Works was building Rabta's metalworking plant. The facility housed precision machines capable of turning out artillery shells plus aerial bombs, as well as corrosion-resistant containers for chemical agents. In 1994, another underground wing was constructed in the Rabta compound, intended to develop and produce CW. This time, the main constructor drafted for the project was a German mechanical engineer, Roland Franz Berger, who had been living in Libya for a long time. Tens of tons of mustard were assessed to have been produced in that facility before it was converted, ostensibly, for civilian purposes. Many more details about the Rabta facility are available elsewhere.[20] Later, two additional facilities, located in Sebha and Tarhuna, were constructed, regarded to contain further installations for the Libyan CW programme. The site of Sebha was picked because it already housed strategic installations for development and production of ballistic missiles. The Tarhuna facility aroused an intensive political confrontation with Tripoli, while the latter was totally denying any link to CW. That cardinal discrepancy has not been fully deciphered.[21] Curiously, on April 6, 1996, Egypt announced that its consulate in Benghazi, Libya, had been attacked by unidentified gunmen, but declined to say whether the incident was linked to a controversy over Libya's alleged

construction of a CW complex in Tarhuna. "What happened was published in today's papers," Egypt's Foreign Minister Amr Moussa told journalists, referring to reports that two Libyan guards and one of the assailants had been killed in the attack; he declined to further elaborate. Most Egyptian newspapers said that the assault was the work of Muslim extremists who had begun to challenge Libyan Colonel Moamer Qaddafi's government. But the opposition Cairo Daily al Ahrar quoted observers linking this "blatant terrorist attack" with accusations against Libya made in Egypt earlier in the week by the US Defence Secretary William Perry. Perry said that he had briefed Egypt's President Hosny Mubarak on evidence that in Tarhuna Libya was building a huge underground CW plant that could be a threat to Egypt's national security. Perry also said that he could not confirm or rule out the possibility of military action to knock out the facility before its scheduled completion in about a year's time. However, he said that the US would exhaust peaceful means before resorting to any use of force. Mussa, who was reported to have undertaken an unannounced trip to Libya after Perry's visit, said that Egypt advocated "quiet diplomacy to reach a settlement and solve these problems". He added that Egypt "does not have any proof of the seriousness of the American accusation against Libya" nor "evidence to indicate the existence" of a CW plant. Libya says the underground works at Tarhuna are part of its "Great Manmade River" subterranean water exploitation scheme. However, about the same time, Qaddafi also stated that the Arabs have a right to acquire CW because of Israel's reputed possession of nuclear weapons.[22]

All in all, the Rabta chemical facility has been described as the "inactivated chemical warfare agent plant", while the two uncovered "CW storage facilities" are probably located in two of the three compounds mentioned. The mustard stock still being found in Libya had been manufactured at the Rabta chemical factory, and the aerial bombs in the Rabta metalworking plant. The mustard, the bombs and the precursor chemicals (some of which were already utilized for mustard production) were housed in the identified storage sites. Some incompatibilities seemingly exist regarding the production of sarin, tabun and lewisite. However, glass-lined vessels designed to contain corrosive chemical reactions, and ancillaries - mainly for synthesis of nerve agents - were found.

Biological weapons

Following the decision made by Qaddafi to undergo deproliferation, Libya declared the existence of a past research programme to develop and produce BW, and the procurement of dual-purpose biological essentials. Apparently, no specific BW facilities were explored following the declaration. The US and UK specialists invited to Libya found no concrete evidence of an ongoing BW effort. The team was given access to medical and pharmacological scientists and facilities, and Libyans were questioned about equipment and research that could be applied to biological warfare, but the Libyans denied that a BW programme had ever existed in an operational state.[23]

Earlier reports indicated that during the 1980s and 1990s an attempt to establish a BW infrastructure took place in Libya, in the form of some masked projects, the main location being apparently at Taminhint (a small town northwest of Sebha in south central Libya).[24] Those masked projects included the General Health Laboratories, Health Research Center, and Microbiological Research Center. Supportive facilities

included the High Institute of Technology in Brack, the Biotechnology Research Center in Tajura, and the Tripoli and al Fattah universities.[25]

Also, during the 1990s, a secret project, code named "Ibn Hayan", aimed to produce bombs and warheads filled with anthrax germs and botulinum toxin. It was led by top Iraqi BW experts who left Iraq due to the UN inspections, and were allowed by Saddam to assist Libya. The project was directly linked to the Libyan presidency bureau. A number of organizations, including universities and laboratories attached to the ministries of agriculture and health, were engaged in making ostensibly innocent purchases of dual-use diagnostic and laboratory materials. Reportedly, mobile equipment designed to producing biological warfare agents through maintaining constant sterile environment, as well as ancillaries were purchased primarily from China and Serbia.

Meaningful assistance had been extended by Cuba. US officials noted Libya (aside from Syria and Iran) was especially interested in advancing its BW programmes. Carl Ford, Assistant Secretary of State for Intelligence and Research (2001-2003), said there was evidence of Cuban exports of dual-use BW technology to Libya, and other Muslim countries in the Middle East. Also, Pakistani specialists apparently helped the Libyan biological effort to achieve some advance.

On the whole, it is clear that an endeavor for practically implementing a BW programme took place, and for certain periods of time, was highly prioritized. Seemingly, it was not productive; distinctively, yet, there is a lack of published information on that subject, particularly on the Ibn Hayan project, which most probably dealt with anthrax.[26]

A lingering process of CW disarmament

In March 2004, the OPCW inspectors verified through continuous on-site monitoring the complete destruction of Libya's entire declared stockpile of unfilled munitions. Libya had provided a destruction plan for these weapons and production facilities. The complete destruction of Libya's CW and the capacity to produce them was originally intended to be completed by April 29, 2007.

In July 2006, the Libyan government asked the OPCW to extend the intermediate and final deadlines for the destruction of its mustard agent stockpile. The organization's top decision-making body, the Conference of the States Parties, granted this request in December 2006, changing Libya's final destruction deadline from April 29, 2007 to December 31, 2010. In July 2007, Libya submitted to the OPCW detailed facility information for the Rabta Toxic Chemical Destruction Facility, which will destroy the mustard agent and remaining precursors that Libya has declared.[27]

However, things were different in practice. Destroying Libya's CW stockpile has been a lot trickier than emptying the shells and bombs. By the end of 2009, Libya had not destroyed any of its Category 1 CW (agent and precursors) and only 39% (551 tonnes) of its Category 2 CW. In March 2012, Libya still had many tonnes of mustard and an awful lot of G-agent precursor chemicals (the Category 2 materials, mostly phosphorous compounds) still kicking around.[28]

WikiLeaks controversy helped clarify the Libya situation to some extent; A WikiLeakes June 2009 State Department cable noted

that Qaddafi played "cat and mouse" with the international community, "deliberately slow-rolling implementation of its WMD commitments."[29]

Interestingly, further WikiLeaks items have provided some corroboration of the problems Libya is experiencing with its CW programme. According to another WikiLeaks released secret cable, the head of Libya's CW destruction programme, Dr. Ahmed Hesnawy (who is also the former head of its CW production programme), told the US Embassy in Tripoli in late 2009 that a "grassroots environmental campaign" and "civil defence concerns about possible leaks" had caused "all hell to break loose" with the programme. The embassy's comments on these explanations were skeptical about the environmental movement, but gave credence to the concern about leaks. It said, "Given tight Libyan Government controls over national security facilities and programmes, we find it hard to believe that a grassroots movement could affect Libyan policy or action on a sensitive programme such as the Rabta facility" and that "The UK DCM, who visited the storage facility earlier this year, told P/E Chief that the containers currently housing the material were in fact leaking when he observed them".[30]

Supervising the destruction of Libya's CW caches through February 2011, the OPCW was forced to suspend its operations due to the uprising against Qaddafi and the resulting deterioration of the country's stability. In early September 2011, OPCW Director-General Ahmet Uzumcu said reports he had received indicated that the remaining weapons were secure and had not fallen into the hands of militant groups.[31] A stockpile of mustard gas, which the OPCW reported the regime may have attempted to hide from inspectors overseeing the CW programme's dismantlement, was reportedly found in the Jufra District by anti-Qaddafi fighters less than two weeks later.[32]

Once again, Libya did not fully meet the final extended deadline of 29 April 2012 for the destruction of its CW stockpiles. In accordance with the 'Detailed Plan for the Destruction of CW Remaining After the Final Extended Deadline of 29 April 2012' submitted by these States Parties, Libya plans the destruction of the remaining Category 1 CW by December, 2013, Category 2 CW by December, 2016 and Category 3 CW by May, 2013. Libya's National Transitional Council is cooperating with the OCPW regarding the destruction of all legacy CW in the country.[33]

However, as of May 2013 Libya had destroyed 85 percent of its Category 1 CW. Destruction operations are now scheduled for completion in December 2016. Nevertheless, as of September 2013, destruction of CW stockpiles has not resumed. The international community cannot yet rule out the possibility of additional undeclared and undiscovered CW assets, and should they exist, cannot assess their security. The chronology of events in Libya provides a new case study on the difficulty of CWC compliance verification, even when on-site inspections are in place.[34]

And the 10-years accumulating lessons from the Libyan CW disarmament file are fairly clear, apparently, in relation to the fresh, ongoing Syrian case. In some senses, though not entirely, the two are strikingly similar.

Endnotes:

1 Dany Shoham, "CW and BW in Egypt", The Nonproliferation Review 5, 3/1998, pp. 48-49.

2 Dany Shoham, "The Evolution of CW and BW in Egypt", Policy Paper No. 46, Ariel Center for Policy Research, ACPR Publishers, 1998.

3 Dany Shoham, The Chemical and Biological Threat to Israel, in: The Threat of Ballistic Missiles in the Middle East; A. Stav (ed.), Sussex Press, UK and ACPR, Israel, 2004, pp. 91-112.

4 Dany Shoham, "The Evolution of CW and BW in Egypt", Policy Paper No. 46, Ariel Center for Policy Research, ACPR Publishers, 1998.

5 Dany Shoham, CW in Egypt and Syria: Evolution, Capabilities, Control, no. 21, June 1995 (Hebrew)

6 Dany Shoham, "CW and BW in Egypt", The Nonproliferation Review 5, 3/1998, pp. 48-49.

7 Julian Perry Robinson, The Problem of Chemical and Biological Warfare: Volume II: CB Weapons Today (Stockholm, SIPRI, 1973), p. 241.

8 Warnings by President Towards Israel, Al-Aharam, April 12, 1974, p. 1.

9 Cairo Radio, July 5, 1975

10 Dany Shoham, Iraq's biological warfare agents: a comprehensive analysis; Critical Reviews in Microbiology, vol. 26, no. 3, pp. 179-204, 2000.

11 Dany Shoham, The Evolution of CW and BW in Egypt, Policy Paper No. 46, Ariel Center for Policy Research, ACPR Publishers, 1998.

12 El-Zoghby EF, Aly MM, Nasef SA et al, Surveillance on A/H5N1 virus in domestic poultry and wild birds in Egypt. Virol J. 2013 Jun 22;10:203. doi: 10.1186/1743-422X-10-203

13 Dany Shoham, Libya: the first real case of deproliferation in the Middle East? Disarmament Diplomacy, pp. 40-46, May-June 2004.

14 Dany Shoham, Libya: the first real case of deproliferation in the Middle East? Disarmament Diplomacy, pp. 40-46, May-June 2004.

15 Paul K. Kerr, Nuclear, Biological and CW and Missiles: Status and Trends - CRS Report for Congress - Updated February 20, 2008

16 David Ruppe, Global Security Newswire, Wednesday, April 14, 2004

17 Hans de Vreij, "Libya Comes Clear", Radio Netherlands Wereldomroep, March 5, 2004.

18 Jonathan Marcus, "Libya Destroys CW", BBC News - World Edition, March 4, 2004.

19 Jonathan B. Tucker, The rollback of Libya's CW programme, The Nonproliferation Review, Volume 16, Issue 3, 2009 pages 363-384

20 G.M. Burck, & C.C. Flowerree, International Handbook on CW Proliferation, Greenwood Press, NewYork, 1991

21 John Hart. Libyan WMD Proliferation: Motivated to Defy America,University of Michigan Political Science, 472, Professor Raymond Tanter, December 10, 1997.

22 FILE: cm620651v6.txt DYAD: LIBYA-EGYPT RIVALRY: RIV1178 http://dingo.sbs.arizona.edu/~ggoertz/rivalry/cmv6/cm620651v6.txt

23 Libyan Biological Warfare, <Global Security.org>, January 18, 2004.

24 John Hart, Libyan WMD Proliferation: Motivated to Defy America,University of Michigan Political Science, 472, Professor Raymond Tanter, December 10, 1997.

25 Dany Shoham, The Chemical and Biological Threat to Israel, in: The Threat of Ballistic Missiles in the Middle East; A. Stav (ed.), Sussex Press, UK and ACPR, Israel, 2004, pp. 91-112.

26 Dany Shoham, Libya: the first real case of deproliferation in the Middle East? Disarmament Diplomacy, pp. 40-46, May-June 2004.

27 Organisation for the Prohibition of CW Website http://www.opcw.org/

28 Diehard Empiricist, March 27, 2012, 25 February 2011 - North African turmoil, CW worries

29 Where are Libya's WMD? RS Politics Daily, February 24, 2011

30 WikiLeaks Report - http://www.telegraph.co.uk/news/wikileaks-files/libya-wikileaks/8294660/LIBYAS-CHEMICAL-WEAPONS-DESTRUCTION-CHIEF-DEFENDS-EXTENSION-REQUEST.html

31 Nuclear Threat Initiative, 30 September 2011, Senate Delegation Positive About Security of Libyan WMD Materials.

32 "Libya: CW Secure According to U.N. Watchdog". The Huffington Post. September 2011. Retrieved 25 September 2011.

33 Black, Ian (22 September 2011). "Libyan rebels discover qaddafi's CW". The Guardian(London). Retrieved 25 September 2011.

34 The Nuclear Threat Initiative Country Profiles http://www.nti.org/country-profiles/libya/chemical/

Relevance of Montreal Protocol in the Contemporary Debates on the Use of Refrigerants

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Summary

The Montreal Protocol has been regarded as the most of effective international treaty mechanism of all time and it has been successful in handling the question of ozone depletion with the help of mechanisms like Multilateral Fund.

The Montreal Protocol (MP), which came into effect in 1989, deals with the elimination of substances that lead to the depletion of the ozone layer. The MP has been widely hailed as the most successful international treaty of all time and through mechanisms such as the Multilateral Fund, it has been able to tackle the problem of ozone depleting substances effectively. Under the MP, the decision was taken to phase out harmful chlorofluorocarbons (CFCs) which were widely used as refrigerants and replace them with hydroflourocarbons (HFCs) which did not affect the ozone layer. Most of the developed world has already implemented this transition. It was only because the rich countries had to phase their chemicals out and then followed by the developing countries.

Meanwhile, the developing world, having made a first transition to relatively less expensive hydrochloroflourocarbons (HCFCs), is slated to start making the switch to HFCs during 2013-2030. However, HFC is a greenhouse gas, capable of further adding to the worldwide warming effect. In fact, it is widely known as a 'super greenhouse gas', which is 3,830 times more potent than carbon dioxide and has a lifetime of 14 years. Curbing emissions of carbon dioxide remains today's priority to counter the climate change phenomenon. The resultant effect of the developing world's vast, emerging market shifting to HFCs would therefore pose a new challenge to tackling climate change. Hence, the pressure is mounting on the developing world, particularly, the large developing countries such as India, to switch directly to newer generation gases, which have neither a GHG nor an ozone depleting effect.

While the claim seems fair at the outset, a deeper look throws light on the more contentious issues. First, HFCs are one of the six greenhouse gases covered under the ambit of the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol (KP), which comes under it. As such, the developing world wants any move to transition away from HFCs to be brought under the UNFCCC framework. This policy line is in direct opposition to the wishes of the developed world, particularly the European Union and the USA, who have voiced their belief that the success of the MP makes it the perfect mechanism to deal with the issue. The EU raised the issue at the climate change negotiations in Bonn this June. It again came up for extensive discussion in Bangkok during the summer review meetings of the MP where the North American proposal received particular attention.

Second, the new generation refrigerant gases being touted by the USA as alternatives for HFCs are patented by few multinational companies in the Western world, most of them American. Hence, agreeing to a transition to these gases would ensure a mostly American-led monopoly of the refrigerant gases business - one which has huge potential given soaring global temperatures. Private American companies such as DuPont have already reaped benefits when the initial transitions to HCFCs and HFCs by the developing and developed world respectively were implemented. Now, a move to newer-generation gases would in the same manner benefit large multinationals, active in lobbying the American Congress and who hold patent rights over those products.

Third, and most crucially, the financial mechanism under the MP is far less stringent when it comes to technology transfer and the possibility of additional funds being sanctioned than the UNFCCC. This in itself is the sole failing of the MP when it comes to such large-scale, prolonged transitions, as the one India would have to make. If the issue of transition past the HFC stage is discussed and implemented under the MP, it would further generate technological dependence in the developing world. The argument in favour of bringing the issue under the MP framework is primarily the UNFCCC's perceived lack of effect in reaching to a consensus regarding tackling global greenhouse gas emission. However, as Brazil has made clear recently, the lack of financial assurances from the developed world, regarding how the transition to new-generation gases would be funded, is a major stumbling block as far as creating political consensus is concerned.

India's Probable Responses

The Government of India has consistently maintained that any discussion on HFCs being bypassed must be discussed under the norms set out in the UNFCCC. However, Prime Minister Manmohan Singh's signing of the G20 Communique in St Petersburg encouraging transition to newer technology bypassing HFCs has left the nation open to pressures from the US. The matter came up again in late September 2013 when Prime Minister Singh met President Obama in Washington where the setting up of an Indo-US Task Force on HFCs was contemplated. The onus now is on the Indian Prime Minister and his cabinet to reverse the lost momentum.

Succumbing to the American pressure in this matter will represent not only a financial loss but also a strategic one. India's defence forces, primarily submarines and aircrafts, make use of these refrigerants extensively. If India were to follow through on a transition to

patented, costly alternatives to HFCs, the cost of indigenous production and maintenance would go up. Further, it also throws up the danger of what would happen if there were a freeze of supply of refrigerants. In 66 years of independence, India has already faced the effect of crippling economic and technological sanctions more than once and implications of such scenario are well known.

India should use the current impasse to highlight its desired role as a leader of the developing world. With China and USA signing an agreement to transition away from HFCs, the onus is now on India. Although India, USA, Mexico, Canada, China, Brazil, South Africa and Micronesia set up an HFC 'discussion group' during the Bangkok session of the MP in June, the focus should be on ensuring a favourable outcome for the developing world. Options should be explored to establish a connection between the MP and UNFCCC frameworks (as says the third mandate of the HFC discussion group) particularly regarding financial aspects.

It is of paramount importance that India manages to acquire maximum technology transfer in this crucial matter. The MP, UNFCCC and the WTO patent norms are all made and shaped largely by the worldview of the West. If amendments to a few of those norms need to be made, the onus is on the developed world to ensure they are done for the benefit of all, instead of asking developing countries to take the fall every time.

If the West continues to level allegations suggesting that it is the pressure from industries in the developing world that is standing in the way of effective decision making, India should respond in no uncertain terms that it is only the business interests of American patent holding corporations that is forcing the US government to push for clubbing HFCs under the MP instead of the UNFCCC as is already laid down. It shall not be fogotten that the US remains a member of the UNFCCC. India should also maintain that it is willing to transition straight from HCFCs to the latest generation of gases as long as the developed world agrees to this being redressed under the financial and technology sharing mechanism of the UNFCCC. If the US is trying to push the onus of acting on climate change onto the developing world, India should send the ball right back into its court. It is high time that the developing world led by the major powers made a concerted effort to realise the interests of the international community.

Sea-Dumped Chemical Weapons

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Summary

The dumping of Chemical Weapons in the seabed was considered a safe option by these states and a major part of it may be due to cutting corners in proper disposal and an idealistic overconfidence in the absorbability of the oceans as far as these toxic components were concerned. At the same time, there was a lack of knowledge and experience to argue against sea-dumping as the best approach for getting rid of these substances.

An Overview

During the inter-war years, United States and other warring nations of the 20th Century realised that they were in possession of vast stockpiles of chemical weapons. Subsequently, after the World War II, the idea of banning their production, use and threat of use gathered unprecedented momentum. These weapons were needed to be banished from the battlefield and equally important was the complete eradication of their stockpile and threat of use. Through general global consent, the major powers began the indiscriminate dumping of chemical weapons (CW) in the oceans except in the Antarctic. The dumping of Chemical Weapons in the seabed was considered a safe option by these states and a major part of it may be due to cutting corners in proper disposal and an idealistic overconfidence in the absorbability of the oceans as far as these toxic components were concerned. At the same time, there was a lack of knowledge and experience to argue against sea-dumping as the best approach for getting rid of these substances. In any case, right from the outset, technical complexity and inadequate knowledge in related fields of safe disassembling meant that dumping at sea was seen as the preferred option when compared to dumping on land. Furthermore, the peculiar nature of the Cold War, where national security and defence not only were given tremendous leeway in terms of secrecy and a lack of transparency in oversight of military operations, there was a perceptible agreement with policies that promised to minimises perceived risks and vulnerabilities.

It has to be noted that off the bat, the common driver for policy makers in general was to avoid the destructive debacle of the

first and second World Wars, the preference for limited military operations seen in the Korean War, and other minor wars especially in Asia. As a result, a lot of the information regarding operations relating to weapons of mass destruction would have been extremely controlled. Lastly, nuclear weapons had entered the picture in power projection and were fast becoming the spine of deterrence and the perception of threat. Chemical and biological weapons seemed to have taken a back seat in absolute political importance, and attention to its potential for harm could not override its deterrence value.

By the close of the Cold War and as the world moved to revamp development and economic prosperity, a lot more attention has been returned to libertarian rights, especially in form of the idea of human security. Being all encompassing, human security does focus on the interests of the individuals considering not only national security, but also environmental security. This also has had a profound impact on the environmental impact of unprocessed dumping of weapons as "... it was only realized later that this materiel had not remained inert on the seabed and was found floating or washed ashore. Cases of encounters with sea-dumped CW materiel intensified public fear of damage to marine and human life, as well as to coastal environments. These fears led to an international effort to legally end the practice of sea-dumping CW materiel".[1]

As the attention from linear strategic state relations shifts towards more liberal lines and the opening up of borders and intensified globalisation, mush of the popular strategic considerations and of civil societies, shifted towards environmentalism, and later on to ecological security (or the security of the environment for its own sake), means that of strategic individual interests, the environment is key to security and sustainable health.

Research on the eradication of chemical weapons dumped in the sea, continues to focus on minimising the damage and highlights the seriousness of the issue. There is also a perception that it is a shared problem and no more a national issue; in an address to the Swiss Parliament on 12 December 2000, the former Soviet President, Mikhail Gorbachev said, "We had all made the mistake years ago of dumping thousands of tonnes of chemical weapons into almost all of the world's oceans. The challenge to recover the containers from the ocean or leaving them to rust away over time was another challenge that we had not yet addressed".[2]

The biggest questions associated with the issue relate to not only how to deal with the chemical weapons already dumped into the depths but also who should be responsible for the clean-up. As most of these weapons are dumped into waters outside territorial boundaries and borders, it presents a legal as well as logistical challenge in terms of safely in salvaging and destroying them in a manner that that they are no longer harmful to the environment or human health.

Estimated locations of the Chemical Weapons dumped at Sea.[3]

Agencies Working Towards Destruction of Chemical Weapons

Legally binding treaties have aimed at ensuring that there would be no increase in CW materiel on the sea-bed. However, at the same time thousands of tons of materiel, already dumped into the oceans, continue to pose danger to environment as well as to human health. There have been numerous efforts through inter-governmental organisations and some environmentalist groups, to stave off proliferation and eradicate these weapons. The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972, administered by the International Maritime Organisation is the central international treaty in this regard. Later, the more specific 'Chemical Weapons Convention' (CWC) established at Hague, in 1997 under the administration of Organization for the Prohibition of Chemical Weapons (OPCW) to control stockpiling or use of chemical weapons. However, "CWC does not directly speak about underwater Chemical weapons but Part IV B of Verification Annex speaks about "Old and Abandoned Chemical Weapons".[4] The United Nations Institute for Disarmament Research also provides consultative service in regards to the elimination of these weapons. Most of the oversight of this issue falls under national armies and governmental efforts are directed or handled by the respective army and not its naval counterpart. Most dumping ceased by 1972, but there is evidence that it did continue in some areas. Dumpsites are scattered throughout the world's oceans as seen above but none where the ill effects of CW is more obvious than the Baltic Sea. Chemical Munitions, Search and Assessment (CHEMSEA) is one regional joint flagship project of the Baltic Sea Region Strategy. It is financed by the EU Baltic Sea Region Programme 2007-2013, funded by the European Union through the European Regional Development Fund. The project is under the leadership of the Institute of Oceanology of the Polish Academy of Sciences (IOPAN).

Challenges in Eliminating Sea-Dumped Chemical Weapons

There are various difficulties in the clean-up process. Despite countries like the United States sharing its data in detail, it is often found to be inaccurate in terms of depths and locations. In addition, even after being able to locate the dumping sites, the disposed weapons keep drifting due to water currents, and keeping track of their movement is difficult. There is also a lack of global coordination in sharing accurate data. Further, "some sites are located in international waters (and thus beyond any particular nation's responsibility), although more often dumping operations were carried out in territorial waters near the borders of neighbouring states".[5]

In addition, "there is still very little information on the environmental risks. The state of corrosion may differ widely from one site to another. The possible hazards of each site need to be determined accurately".[6] Therefore there is a need for more research.

One of the major challenge is destroying these chemical weapons, scientists continue to deliberate and discuss the methods that should be used to deal with the corroding chemical weapons containers and threats of a possible leak if not addressed timely. The commonly used approach is to leave as is, until further studies are sufficient to take action. Initiatives in research and disarming are prohibitively costly and joint operations will likely be the way forward to salvage and properly and safely destroy these munitions. Importantly, a lack of definitive data on

locations, or information as to the condition of these weapons exacerbates the definitive threat posed by these munitions.

The biggest danger is the possibility for these underwater dumping sites to be disturbed and whipped up by violent storms and carried by the winds or the waves to a battered shore, resulting in an intensified offensive with weaponized and deadly poisonous gale winds. A lack of a proper regime for a proper disposal of these weapons has contributed to the lack of coordination or investment into suitable disposal mechanisms and technologies. Political will that is supported by public awareness is critical for this.

The presence of these weapons unguarded on the ocean-floor, can invite attempts to salvage them by sinister groups. In fact, beyond salvaging, underwater detonations can cause a massive leak with subsequent economic, environmental and human costs. There have been incidences of fatalities, as well as documented evidence of the destructive force as data suggests mutation in certain fish varieties due to exposure to abandoned chemical weapons.

Endnotes:

1 Joshua Newman and Dawn Verdugo, "Building awareness of sea-dumped chemical weapons", Disarmament Forum: Maritime Security (United Nations Institute for Disarmament Research, United Nations, 2010), p.46.

2 "History of Chemical Weapons", Green Cross Switzerland, available at http://www.greencross.ch/en/projects/chemical-weapons-campaign/history-of-chemical-weapons.html

3 See, Chemical Weapons Munitions Dumped at Sea: An Interactive Map, James Martin Centre Non-Proliferation Studies, available at http://cns.miis.edu/stories/090806_cw_dumping.htm

4 Paul F. Walker, "Sea Dumped Chemical Munitions", November 11, 2010, available at http://globalgreen.org/docs/publication-168-1.pdf , p. 21.

5 Tine Missiaen and Jean-Pierre Henriet, "Chemical Munitions Dumpsites in Coastal Environments: A Border Transgressing Problem", Renard Centre of Marine Geology (University of Gent, Belgium), p. 1.

6 Ibid. p.10

References:

(Data has been collected from open sources available on public forum)

1. Joshua Newman and Dawn Verdugo, "Building awareness of sea-dumped chemical weapons", Disarmament Forum: Maritime Security (United Nations Institute for Disarmament Research, United Nations, 2010), pp. 45-53.

2. Organisation for the Prohibition of Chemical Weapons, available at http://www.opcw.org

3. A documentary on Chemical Weapons Munitions Dumped at Sea by Monterey International of International Studies, available at http://www.youtube.com/watch?v=wW76ha24QhA

4. Paul F. Walker, "Sea Dumped Chemical Munitions", November 11, 2010, available at http://globalgreen.org/docs/publication-168-1.pdf

5. "History of Chemical Weapons", Green Cross, Switzerland, available at http://www.greencross.ch/en/projects/chemical-weapons-campaign/history-of-chemical-weapons.html

6. Chemical Weapons, available at http://www.reachingcriticalwill.org/resources/fact-sheets/critical-issues/4582-chemical-weapons

7. Thomas C. Weiss, "Health Impact of Chemical Weapons", Disabled World, May 8, 2013, available at http://www.disabled-world.com/editorials/weapons.php

8. Caroline Ong, Tamara Chapman, M.A., Raymond Zilinskas, Ph.D., Benjamin Brodsky, Ph.D., Joshua Newman, M.A., "Chemical Weapons Munitions Dumped at Sea: An

Interactive Map", James Martin Centre Non-Proliferation Studies, available at http://cns.miis.edu/stories/090806_cw_ dumping.htm

9. "Chemical Weapons Elimination", Centers for Disease Control and Prevention, available at http://www.cdc.gov/nceh/demil/

10. "Sea Dumped Chemical Weapons Side Event", available at http://www.underwater munitions.org/pdf/Side%20Event%20July%2015%20Final.pdf

11. Tine Missiaen and Jean-Pierre Henriet, "Chemical Munitions Dumpsites in Coastal Environments: A Border Transgressing Problem", Renard Centre of Marine Geology (University of Gent, Belgium), p. 10.

Chemical and Biological News

ARMS CONTROL

Sampling and Analysis Course Held in Poland

Friday, 27 September 2013

The Government of Poland and the OPCW jointly organized a specialized course on Sampling and Analysis in a Highly Contaminated Environment, which was held at the Central School of the State Fire Service in the city of Czestochowa from 23 to 27 September 2013 with 18 participants from 15 States Parties.*

The course relates to Article X of the Chemical Weapons Convention and offered extensive theoretical knowledge and training in the use of individual protective equipment, including the use of a self-contained breathing apparatus (SCBA). The participants were familiarised with chemical, biomedical and environmental sampling techniques, which were exercised in different practical sessions.

The course also facilitated exchange of information and experience regarding Article X implementation and provided a forum to discuss potential areas of cooperation among the participating States Parties.

* Argentina, Armenia, Azerbaijan, Barbados, Belarus, Botswana, Czech Republic, Hungary, Jordan, Malaysia, Philippines, Poland, Portugal, Romania, and Tunisia

http://www.opcw.org/news/article/sampling-and-analysis-course-held-in-poland/

OPCW and IUPAC update educational materials for raising awareness of the multiple uses of chemicals and the Chemical Weapons Convention

Tuesday, 26 November 2013

The OPCW has collaborated on an International Union of Pure and Applied Chemistry (IUPAC) project to update educational material for raising awareness of the multiple uses of chemicals and the Chemical Weapons Convention. Interactive materials were first produced in 2005-07 under an earlier IUPAC/OPCW project, but these have been substantially updated and revised under the recent project which has been led by Peter Mahaffy from the King's Centre for Visualization in Science in Canada and Alastair Hay from the University of Leeds in the United Kingdom.

The comprehensive set of interactive web materials invites educators, students, policy makers, and the public to explore the beneficial uses, misuses, and abuses of multi-use chemicals. The resources can be used alone or in support of interactive presentations to build understanding about the responsibilities of both scientists and the public to respond to the misuse of chemicals, such as in the production of chemical weapons. The interactive web materials were created by the King's Centre for Visualization in Science, working in cooperation with members of the OPCW Scientific Advisory Board and its Temporary Working Group on Education and Outreach in Science and Technology Relevant to the Chemical Weapons Convention.

The educational materials were piloted at a workshop during the 44th World Chemistry Congress in Istanbul in August 2013 and will also be demonstrated during the 15th

Annual Meeting of CWC National Authorities in The Hague in late November 2013.

The project received financial support from IUPAC and from the European Union under its Council Decision of March 2012 in support of the OPCW. Further financial support is now being sought to translate the materials in all official languages of the OPCW.

http://www.opcw.org/news/article/opcw-and-iupac-update-educational-materials-for-raising-awareness-of-the-multiple-uses-of-chemicals/

DISARMAMENT

Syria Completes Destruction Activities to Render Inoperable Chemical Weapons Production Facilities and Mixing/Filling Plants

Thursday, 31 October 2013

Director-General salutes returning group of OPCW inspectors to The Hague

The Joint Organisation for the Prohibition of Chemical Weapons - United Nations Mission confirmed today that the government of the Syrian Arab Republic has completed the functional destruction of critical equipment for all of its declared chemical weapons production facilities and mixing/filling plants, rendering them inoperable.

By doing so, Syria has met the deadline set by the OPCW Executive Council* to "complete as soon as possible and in any case not later than 1 November 2013, the destruction of chemical weapons production and mixing/filling equipment."

At the same time, OPCW Director-General Ahmet Üzümcü welcomed back to the OPCW headquarters in The Hague a returning group of eight inspectors, who arrived in Damascus with the Advanced Team on 1 October and have been conducting the verification work on the ground ever since.

"On behalf of the OPCW, I thank you and all of our colleagues from the Joint OPCW-UN Mission who remain in Syria for your outstanding service," the Director-General said. "I salute the fortitude and courage you've all demonstrated in fulfilling the most challenging mission ever undertaken by this Organisation."

The Joint OPCW-UN Mission has inspected 21 of the 23 sites declared by Syria, and 39 of the 41 facilities located at those sites. The two remaining sites were not visited due to safety and security concerns. But Syria declared those sites as abandoned and that the chemical weapons programme items they contained were moved to other declared sites, which were inspected.

The Joint Mission is now satisfied that it has verified - and seen destroyed - all of Syria's declared critical production and mixing/filling equipment. Given the progress made in the Joint OPCW-UN Mission in meeting the requirements of the first phase of activities, no further inspection activities are currently planned. The next milestone for the mission will be 15 November, by which time the Executive Council must approve a detailed plan of destruction submitted by Syria to eliminate its chemical weapons stockpile.

http://www.opcw.org/news/article/syria-completes-destruction-activities-to-render-inoperable-chemical-weapons-production-facilities-a/

OPCW Completes First Round of Verification Activities in Syria

Monday, 28 October 2013

As of 27 October 2013, inspectors of the Organisation for the Prohibition of Chemical

Weapons in the OPCW-UN Joint Mission in Syria completed verification activities at 21 of the 23 chemical weapons related sites declared by Syria.

The two remaining sites have not been visited due to security reasons. Efforts by the Joint Mission to ensure the conditions necessary for safe access to those sites will continue.

Syria submitted a formal declaration of its chemical weapons programme three days ahead of the 27 October deadline, together with a general plan of destruction, for consideration by the OPCW Executive Council.

The OPCW-UN Joint Mission in Syria was established to achieve the timely elimination of the Syrian chemical weapons programme in the safest and most secure manner possible.

http://www.opcw.org/news/article/opcw-completes-first-round-of-verification-activities-in-syria/

Syria Submits its Initial Declaration and a General Plan of Destruction of its Chemical Weapons Programme

Sunday, 27 October 2013

On 24 October 2013, the Syrian Arab Republic submitted to the OPCW its formal initial declaration covering its chemical weapons programme. Syria's submission is in line with the deadline set by the OPCW Executive Council in its decision of 27 September 2013 requiring a complete initial declaration by 27 October 2014. Such declarations provide the basis on which plans are devised for a systematic, total and verified destruction of declared chemical weapons and production facilities.

The document from Syria includes a general plan of destruction for consideration by the OPCW Executive Council.

Under the terms of the Chemical Weapons Convention, new States Parties are also required to submit a declaration covering activities and facilities that are not prohibited under the Convention but can be subjected to routine verification measures as a confidence building measure and to establish the peaceful intent of commercial activities. Syria has also submitted such a declaration.

The first monthly report on the work of the OPCW-UN Joint Mission in Syria has been issued to States Parties by the Director-General and forwarded for submission to the Security Council through the UN Secretary-General. It covers the progress made since inspections began in Syria following the deployment of the advance team on 1 October. This work included the priority task of making inoperable chemical weapons production facilities, and mixing and filling plants.

http://www.opcw.org/news/article/syria-submits-its-initial-declaration-and-a-general-plan-of-destruction-of-its-chemical-weapons-pro/

OPCW Concludes Basic Course for National Authorities on Implementation of the Chemical Weapons Convention

Wednesday, 25 September 2013

The Basic Course was held at the OPCW headquarters in The Hague from 16 to 20 September 2013 with 34 participants representing the National Authorities of 31 States Parties.* The course is a part of the OPCW's continuing efforts aimed at assisting National Authorities to meet their obligations under the Chemical Weapons Convention (CWC).

The goals of the CWC can only be achieved through its full and effective implementation by all States Parties, which makes it essential

that the personnel of National Authorities have a good understanding of the requirements of the Convention. The Basic Course curriculum covers all aspects of the CWC, including the history of the Convention, an overview of the OPCW, the role of the National Authority, national implementation measures under Article VII, the verification and transfers regimes, and an introduction to EDNA (the Electronic Declarations tool for National Authorities.

Participants were also briefed on the programmes of the International and Cooperation (ICA) Division and the e-learning modules developed by the Technical Secretariat. The course included several practical hands-on exercises, including a series of case studies and exercises on legal aspects of the Convention, inspections, and the preparation of declarations under Article VI. An important highlight of the visit was a visit to the OPCW Laboratory and Equipment Store in Rijswijk where the participants learned about their respective roles and functions.

*Angola, Argentina, Bahamas, Brazil, Canada, Colombia, Costa Rica, Cuba, El Salvador, Gambia, Grenada, Honduras, Iraq, Jamaica, Japan, Kenya, Republic of Korea, Lebanon, Malawi, Malaysia, Namibia, Panama, Peru, Saint Lucia, Somalia, South Africa, Spain, Sudan, Tuvalu, United Arab Emirates, Ukraine, Zambia.

http://www.opcw.org/news/article/opcw-concludes-basic-course-for-national-authorities-on-implementation-of-the-chemical-weapons-conve/

OPCW Director-General Welcomes Agreement on Syrian Chemical Weapons

Saturday, 14 September 2013

The Director-General of the Organisation for the Prohibition of Chemical Weapons (OPCW), Ambassador Ahmet Üzümcü, has welcomed the agreement on chemical weapons in Syria that was announced today following talks held in Geneva between the Foreign Minister of Russia, Sergey V. Lavrov, and U.S. Secretary of State John Kerry.

The Director-General hopes that these agreements will facilitate the fulfilment of obligations by Syria deriving from the Chemical Weapons Convention, which it has decided to join. Following decisions that are proposed to be taken by the Executive Council of the OPCW, necessary measures will be adopted to implement an accelerated programme to verify the complete destruction of Syria's chemical weapons stockpiles, production facilities and other relevant capabilities.

The Director-General envisages that this significant step will be fully supported by States Parties to the Chemical Weapons Convention (CWC) and the wider international community. The CWC represents the sole multilateral mechanism to rid the world of chemical weapons and the OPCW, with over 16 years of experience, possesses the necessary skills and capacities to undertake such missions. OPCW experts are already at work preparing a roadmap that anticipates the various undertakings and missions in Syria. Nine OPCW experts recently participated in the UN investigation of alleged use of chemical weapons in Syria.

These matters are expected to be discussed by the OPCW Executive Council in the coming week.

http://www.opcw.org/news/article/opcw-director-general-welcomes-agreement-on-syrian-chemical-weapons/

Director-General and Executive Council Delegation Visit China to Assess Destruction Activities for Abandoned Chemical Weapons

Thursday, 12 September 2013

The OPCW Director-General, Ambassador Ahmet Üzümcü, accompanied a delegation of Executive Council (EC) representatives to the People's Republic of China from 9 to 13 September 2013, where they visited facilities for the excavation, recovery and destruction of abandoned chemical weapons (ACWs) in Haerbaling, Jilin Province.

The purpose of the visit was to assess the status of efforts to eliminate chemical weapons stored at Haerbaling that were abandoned by Japan on Chinese territory in World War II. The visit was the first-ever visit by an EC delegation to China and in accordance with an Executive Council decision in July 2012. The delegation was led by the EC Vice-Chair, Ambassador Miguel Calahorrano Camino of Ecuador, and comprised representatives of each of the five OPCW regional groups and observers from other interested States Parties.

"We want to thank the Governments of China and Japan for having arranged this visit," said Ambassador Calahorrano. "The EC found it most informative in understanding the complexities surrounding the destruction of ACWs abandoned by Japan on the territory of China." He complimented the two States Parties for their co-operation and urged them to continue working closely to ensure that destruction of the ACWs is completed as soon as possible.

As of July 2013 approximately 50,000 ACWs items have been recovered in 19 provinces across China, of which more than 37,000 have been destroyed as verified by the OPCW. This includes items that were destroyed at the Nanjing Mobile Destruction Facility (MDF) in Jiangsu Province as well as destruction of ACW items at the Shijiazhuang MDF in Hebei Province.

ACW recovery and excavation operations began at Haerbaling in December of 2012 and destruction operations there are expected to begin in 2014. The strategy for destroying Japanese ACWs in China is to employ a fixed facility in Haerbaling, one MDF that can be transported for use in pre-determined locations of northern China, and a second MDF for use in the south of the country.

Under the provisions of the Chemical Weapons Convention, Japan as the abandoning State Party shall provide all necessary financial and technical resources, as well as experts, facilities and other resources, to destroy the declared ACWs. As the Territorial State Party, China provides appropriate co-operation and infrastructure support with the OPCW providing verification oversight of the destruction operations.

In Beijing the delegation met the Vice Minister of Foreign Affairs, Mr Zhai Jun, and the Principle Officer of the Ministry of National Defence, and attended a dinner at the Japanese Embassy.

http://www.opcw.org/news/article/director-general-and-executive-council-delegation-visit-china-to-assess-destruction-activities-for-a/

OPCW, the European Union, and the Government of Indonesia host a Regional Consequence Management Exercise

Tuesday, 20 August 2013

The Organisation for the Prohibition of Chemical Weapons (OPCW), the European Union (EU) and the Government of

Indonesia hosted a table-top consequence management exercise for States Parties from the South-East Asian Region*, on 19 and 20 August 2013 in Jakarta Indonesia.

The two-day table-top exercise simulated a large-scale release of toxic chemicals. Thirty eight participants from Indonesia, The Philippines, Malaysia and Thailand took part in the exercise, with two representatives from Myanmar participating as observers. They discussed how to manage a crisis of this nature, formulating plans on how to respond to the incident and to mitigate the impact of the toxic chemicals on communities and facilities.

Supported by disaster management professionals from Australia and New Zealand, the participants explored every aspect of the scenario and drafted response plans based on international best practice.

The consequence management exercise is the initial element of a further project in chemical emergency response to be held for the participating countries in Malaysia later this year.

Article X of the Chemical Weapons Convention (CWC) mandates the Organisation to assist States Parties to develop the necessary capacities to respond to the use or threat of use of chemical weapons and to effectively manage the consequences of the unplanned release of toxic chemicals.

Speaking at the opening of the table-top exercise, the Director General of the Department of Industry of Indonesia, Mr Benny Wachjudi, emphasised the importance of the development of the necessary capacity and expertise by first responders in countries of the region to respond to chemical emergencies. He took the opportunity to thank the OPCW and the European Union for their invaluable contribution to this important initiative.

* Indonesia, The Philippines, Malaysia, Thailand and Myanmar (who were invited as a non State Party)

http://www.opcw.org/news/article/opcw-the-european-union-and-the-government-of-indonesia-host-a-regional-consequence-management-exe/

Workshop on Assistance and Protection and Matters Related to Regional Co-ordination held in Argentina

Tuesday, 22 October 2013

A workshop on assistance and protection for States Parties in the Latin America and Caribbean (GRULAC) region was held from 15 to 17 October 2013 in Buenos Aires for 17 experts from 13 States Parties.* The workshop was co-organised by the OPCW and Argentina's National Authority with financial support from the European Union.

The workshop addressed the needs and capacities of States Parties in the region for delivering assistance through the OPCW as mandated in Article X of the Chemical Weapons Convention. Participants discussed ways and means to enhance regional coordination, with a view to achieving timely and effective emergency responses to chemical attacks and to incidents involving toxic industrial chemicals.

The workshop also served as a platform for exchanging information and experience regarding emergency response mechanisms in the participating countries.

* Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, El Salvador, Honduras, Nicaragua, Panama, Peru and Uruguay.

http://www.opcw.org/news/article/workshop-on-assistance-and-protection-and-matters-related-to-regional-co-ordination-held-in-argentin/

Sampling and Analysis Course Held in Poland

Friday, 27 September 2013

The Government of Poland and the OPCW jointly organized a specialized course on Sampling and Analysis in a Highly Contaminated Environment, which was held at the Central School of the State Fire Service in the city of Czestochowa from 23 to 27 September 2013 with 18 participants from 15 States Parties.*

The course relates to Article X of the Chemical Weapons Convention and offered extensive theoretical knowledge and training in the use of individual protective equipment, including the use of a self-contained breathing apparatus (SCBA). The participants were familiarised with chemical, biomedical and environmental sampling techniques, which were exercised in different practical sessions.

The course also facilitated exchange of information and experience regarding Article X implementation and provided a forum to discuss potential areas of cooperation among the participating States Parties.

* Argentina, Armenia, Azerbaijan, Barbados, Belarus, Botswana, Czech Republic, Hungary, Jordan, Malaysia, Philippines, Poland, Portugal, Romania, and Tunisia

http://www.opcw.org/news/article/sampling-and-analysis-course-held-in-poland/

Myanmar Prepares to Ratify Chemical, Biological Weapons Treaties

2013-12-11

AFP

Myanmar is making preparations to ratify the international treaties banning the use, production, and stockpiling of chemical and biological weapons, a spokesman for President Thein Sein said Wednesday.

The spokesman, deputy information minister Ye Htut, told RFA's Myanmar Service that ratification documents were being prepared for parliament's approval.

Myanmar signed the Chemical Weapons Convention (CWC) in 1993 and the Biological Weapons

Convention (BWC) in 1972 but is among a few signatory countries which have not ratified the key treaties.

The head of the world's chemical watchdog said Wednesday that Myanmar was among three of six countries not covered by the CWC which are close to joining the agreement.

Speaking in Oslo the day after the Organisation for the Prohibition of Chemical Weapons (OPCW) formally 12/18/13 Myanmar Prepares to Ratify Chemical, Biological Weapons Treaties received the Nobel Peace Prize, director general Ahmet Uzumcu said Myanmar together with Angola and South Sudan “are very close” to joining the pact, Agence France-Presse reported.

The Chemical Weapons Convention-which outlaws the production, stockpiling, and use of chemical weapons -entered into force in 1997 and has 190 member countries including Syria, the latest nation to join in October this year.

Ye Htut said the Myanmar government was also holding discussions with the OPCW on measures it should take after the ratification process, including staff training prospects.

Myanmar has come under pressure to ratify the international treaties to underline its seriousness about reforms.

Looming questions

Despite political and economic reforms enacted since Myanmar's military junta gave up power more than two years ago, experts say there are still looming questions about possible chemical weapons stockpiles and allegations that the military used chemical weapons against ethnic rebel groups. Reformist President Thein Sein's government has denied the claims. "Chemical weapons pose a grievous rights threat to mankind, so why is Myanmar one of the hold-out nations in the world that has still not ratified the Chemical Weapons Convention?" Human Rights Watch's deputy Asia director Phil Robertson asked in a statement in October.

By not ratifying the treaty, Myanmar has not agreed to submit itself to international inspections or refrain from steps that would violate the convention.

In February, a technical assistance team from the OPCW visited the Myanmar capital Naypyidaw and met with lawmakers to discuss implementation of the treaty.

Myanmar's government asserts the country has no chemical, biological, or nuclear weapons programs.

But ethnic armed rebel groups including the Kachin Independence Army (KIA) have accused the Myanmar military of using chemical weapons as recently as last year in their long-running war in the country's borderlands.

In the 1980s and early 1990s, the U.S. government voiced suspicions of a possible chemical weapons program under the military junta in Myanmar, naming China and North Korea as possible suppliers. Since then the U.S. has been less vocal in its concern about the issue.

According to global security nonprofit organization the Nuclear Threat Initiative, there is currently "no evidence" to suggest Myanmar has a chemical weapons program.

In September, Myanmar signed with the U.N.'s nuclear watchdog, the International Atomic Energy Agency (IAEA), an additional protocol on nuclear disarmament that gives weapons inspectors wider access to facilities that could be used to develop nuclear technology. 12/18/13 Myanmar Prepares toRatify Chemical, Biological Weapons Treaties

The signing came ten months after Thein Sein pledged to abide by the U.N.'s arms embargo on North Korea and to allow the IAEA full access to Myanmar weapons sites.

Reported by Khin Maung Soe for RFA's Myanmar Service. Translated by Khin Maung Soe.

Written in English by Parameswaran Ponnudurai.

http://www.rfa.org/english/news/myanmar/weapons-12112013192030.html

NATIONAL AND INTERNATIONAL DEVELOPMENTS

Joint Statement from the Organisation for the Prohibition of Chemical Weapons (OPCW) and the United Nations (UN)

Wednesday, 16 October 2013

The OPCW-UN Joint Mission in Syria has been established today. This follows close consultations between the Director-General of the OPCW and the Secretary-General of the United Nations. It also conforms with the provisions of the decision taken by the

OPCW Executive Council on 27 September 2013 which was followed by the adoption by the UN Security Council of its resolution 2118 (2013).

The Joint Mission has been established in order to achieve the timely elimination of the Syrian chemical weapons programme in the safest and most secure manner possible. It will continue the work undertaken by the OPCW and the UN in Syria since the beginning of this month.

Ms. Sigrid Kaag has been appointed as the Special Coordinator for the OPCW-UN Joint Mission to eliminate the chemical weapons programme of the Syrian Arab Republic.

The OPCW and the UN have established separate but complementary Trust Funds which have been launched today at the Headquarters of the respective organizations.

The establishment of the Joint Mission, the appointment of the Special Coordinator and the arrangements related to the Trust Funds are based on the recommendations made by the UN Secretary-General, with the advice and support of the OPCW Director General, in accordance with the letter by the Secretary-General to the Presidency of the Security Council dated 7 October 2013.

http://www.opcw.org/news/article/joint-statement-from-the-organisation-for-the-prohibition-of-chemical-weapons-opcw-and-the-united/

Syria's Accession to the Chemical Weapons Convention Enters into Force

Monday, 14 October 2013

Today, on 14 October 2013, the Chemical Weapons Convention entered into force for the Syrian Arab Republic, making it the 190th State Party to the treaty. Syria deposited its instrument of accession with the United Nations Secretary-General on 14 September.

At its 74th session, held from 8 to 11 October 2013, the OPCW Executive Council noted the accession of the Syrian Arab Republic and urgently called upon all States not Party to the Convention to join without delay or precondition.

http://www.opcw.org/news/article/syrias-accession-to-the-chemical-weapons-convention-enters-into-force/

Statement by the OPCW Director-General on the 2013 Nobel Prize for Peace

Friday, 11 October 2013

The decision by the Nobel Committee to bestow this year's Peace Prize on the OPCW is a great honour for our Organisation.

We are a small organisation which for over 16 years, and away from the glare of international publicity, has shouldered an onerous but noble task - to act as the guardian of the global ban on chemical weapons that took effect in 1997.

That year, a hundred-year effort was crowned with success as the Chemical Weapons Convention entered into force.

Our organization was tasked to verify the elimination of chemical weapons from the world and to encourage all nations to adhere to this hard-earned norm.

We have since then worked with quiet determination to rid the world of these heinous weapons - weapons which have been used to horrific effect throughout the twentieth century, and, sadly, in our own time too.

Events in Syria have been a tragic reminder that there remains much work yet to be done. Our hearts go out to the Syrian people who were recently victims of the horror of chemical weapons.

Today we are engaged in work which is meant to ensure that this atrocity is not repeated.

Never in the history of our organisation have we been called on to verify a destruction program within such short timeframes - and in an ongoing conflict.

We are conscious of the enormous trust that the international community has bestowed on us.

Working to realize the vision of a world free of chemical weapons, we rely on the expertise, professionalism and dedication of our staff - qualities that have been forged through a solid record of achievement.

This would clearly not be possible without the steadfast support and commitment of our States Parties.

The recognition that the Peace Prize brings will spur us to untiring effort, even stronger commitment and greater dedication.

I truly hope that this award, and the OPCW's ongoing mission together with the United Nations in Syria, will help broader efforts to achieve peace in that country and end the suffering of its people.

I take this opportunity to commend all those who have contributed to making the ban on chemical weapons an enduring and universal norm.

I look forward to accepting this award in humility and in recognition of the professionalism of our staff, both past and present, and the strong support we have received from our States Parties.

http://www.opcw.org/news/article/opcw-receives-2013-nobel-prize-for-peace/

OPCW Provides Somalia Assistance to Begin CWC Implementation

Friday, 13 September 2013

The OPCW organised a special 2-day induction programme on 12 and 13 September 2013 for a group of senior government representatives from the Federal Republic of Somalia to assist country's implementation of the Chemical Weapons Convention (CWC).

The delegation was headed by H.E. Ambassador Yusuf Mohamed Ismail Bari-Bari, Permanent Representative of Somalia to the United Nations in Geneva, together with Mr Mohamed Sheik Hassan Hamud, Member of the National Security Advisory Team, and Mr Mohamed Ali Jama, Senior Security Advisor to the Prime Minister.

Somalia acceded to the CWC on 29 May of this year and the treaty came into force 30 days later on 28 June, thereby making Somalia the CWC's 189th State Party. This is the first time that officials from Somalia visited the OPCW and attended a programme as representatives of a State Party.

The Deputy Director-General, Mrs Grace Asirwatham, welcomed the delegation on behalf of the Director-General and expressed the readiness of the OPCW Technical Secretariat to assist by all means Somalia's implementation efforts. Thanking the Secretariat for organising the induction programme, the Somali delegation sought the cooperation and assistance of the OPCW

in order to enhance the necessary capacity of Somalia to implement the CWC.

The programme included elements on rights and obligations of States Parties under the Convention, initial implementation measures for a new State Party, international cooperation and assistance functions of the Technical Secretariat, verification-related national requirements, and the overall institutional setup and operations of the OPCW. The delegation also paid a visit to the OPCW Laboratory.

http://www.opcw.org/news/article/opcw-provides-somalia-assistance-to-begin-cwc-implementation/

Regional Course on Chemical Emergency Response Held in Brazil

Monday, 02 September 2013

The Government of the Republic of Brazil and the OPCW jointly organised the Regional Assistance Course on Chemical Emergency Response for Lusophone Countries in Rio de Janeiro, Brazil from 26 to 30 August 2013. Fourteen participants from five States Parties* were trained and three observers from Angola were sponsored by the OPCW.

The course was related to assistance and protection against chemical weapons under Article X of the Chemical Weapons Convention and offered training in the use of protective equipment, and in monitoring, detection, and decontamination techniques which are used in response to attacks with chemical warfare agents. Participants also acquired knowledge of chemical-emergency responses through field exercises. Selected participants were from national emergency-response agencies involved in dealing with chemical-related incidents with a solid background in the chemistry associated with assistance and protection against chemical weapons.

The course also facilitated the exchange of information and experience regarding the implementation of Article X of the Convention and provided a forum to discuss future cooperation among participating Member States.

*Cape Verde, Guinea Bissau, Mozambique, Portugal, São Tomé e Príncipe.

http://www.opcw.org/news/article/regional-course-on-chemical-emergency-response-held-in-brazil/

Director-General Visits Sweden, Meets Prime Minister

Saturday, 14 December 2013

During a two-day visit to Sweden that concluded today, Director-General Ahmet Üzümcü had separate meetings with the Prime Minister, Mr. Fredrik Reinfeldt, and with the Minister of Foreign Affairs, Mr Carl Bildt.

The Director-General provided the Prime Minister and Foreign Minister with an update on the work of the OPCW-UN Joint Mission in Syria, including the detailed plan for the removal and destruction of Syrian chemicals.

In a joint press conference with Mr Bildt, the Director-General expressed his “high appreciation for the contribution by the Swedish authorities to disarmament efforts, including to the OPCW.” Mr Bildt noted that the OPCW's Nobel Peace Prize this year was a “well deserved award.”

During his visit, the Director-General also met with Mr Per Westerberg, Speaker of the Swedish Parliament, and participated in a panel discussion on chemical disarmament, with Foreign Minister Bildt and Dr Paul Walker of Green Cross International. He commended Sweden's support for efforts to

broaden the reach of the Chemical Weapons Convention through engagement with science, industry, and NGOs.

The Director-General completed his visit today after delivering a lecture at Gothenburg University, "Making Chemical Disarmament a Reality."

http://www.opcw.org/news/article/director-general-visits-sweden-meets-prime-minister/

OPCW Director-General holds Official Meetings with Norwegian Ministers and Parliamentarians

Wednesday, 11 December 2013

Director-General Ahmet Üzümcü this morning met in Oslo with the Norwegian Prime Minister, Ms Erna Solberg, and with the Minister of Foreign Affairs, Mr Borge Brende. He updated them on the work of the OPCW-UN Joint Mission in Syria and discussed options for Norway's involvement in efforts to eliminate the Syrian chemicals weapons programme.

"This challenging undertaking requires solid international cooperation and strong collective commitment in order to be conducted safely and as swiftly as possible. I am grateful to Norway for its strong support to the OPCW-UN Mission in Syria, through a voluntary contribution to the Trust Fund for Destruction and through an offer for maritime assistance", stated Ambassador Üzümcü.

He noted that the detailed Plan for the destruction of Syrian chemicals out of Syria will be presented next week.

The Director-General also held official meetings with Mr Olemic Thommessen, President of the Storting (Norwegian Parliament), and with Ms Anniken Huitfeld, Chair of the Standing Committee on Foreign Affairs and Defence, as well as with other members of the Committee.

In these meetings, the Director-General stressed that Norway's sustained collaboration in furthering the goals of the Chemical Weapons Convention, including in supporting a stronger involvement of NGOs, demonstrated a "remarkable awareness of the significance of the Convention and of the necessity to broaden its scope and its reach".

"I am looking forward to the continued cooperation with the Norwegian authorities" concluded Ahmet Üzümcü.

The Director-General received yesterday the Nobel Peace Prize 2013 on behalf of the OPCW.

http://www.opcw.org/news/article/opcw-director-general-holds-official-meetings-with-norwegian-ministers-and-parliamentarians/

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http://www.opcw.org/news/article/opcw-provides-somalia-assistance-to-begin-cwc-implementation/

North Korea uses prisoners for chemical weapons tests: U.S. report

The report adds that North Korea had reportedly provided chemical weapons or technology for chemical weapons to Egypt, Iran, Libya and Syria since the 1990s.

by Julian Ryall, The Daily Telegraph October 15, 2013

North Korea is using political prisoners held in its extensive gulag network as subjects for chemical weapons tests, according to a report in the U.S.

The allegations have been made in the most recent report on Pyongyang's chemical weapons capabilities by 38 North, the respected website operated by the U.S.-Korea Institute at Johns Hopkins School of Advanced International Studies, and are based on testimony from both prisoners and former guards who managed to defect.

One defector who served as a security official at Detention Camp 22 described tests in which healthy prisoners were placed inside glass chambers and technicians monitored the effects as gas was pumped into the chambers.

"Normally, a family sticks together and individual prisoners stand separately around the corners," Kwon Kyok, a pseudonym, said in a documentary cited by the report. Scientists observe the entire process from above, through the glass.

"I watched a whole family being tested on suffocating gas and dying in the gas chamber: parents, one son and a daughter," he said.

The parents were vomiting and dying, but until the very last moment they tried to save the kids by doing mouth-to-mouth breathing.

"For the first time it hit me that even prisoners are capable of powerful human affection."

A former member of the North Korean military recounted his involvement in similar experiments on an island off the west coast of the Korean Peninsula. It has parallels with a report issued by a human rights group in Seoul in June that claimed the North was carrying out chemical and biological weapons experiments on disabled children on an island off South Hamgyong Province.

The report said the claims of political prisoners being used as test subjects for chemical weapons were "extremely difficult to confirm".

However, it added: "Taken as a whole, and within the context of what is currently known about the treatment of political prisoners, such reports suggest a long-standing policy of low-level lethal testing of chemical agents on unwilling human subjects."

The study suggested that North Korea was able to manufacture 4,500 tons of chemical agents a year, but had the capacity to increase that up to 12,000 tons a year in the event of war.

The chemicals the regime was producing included hydrogen cyanide, phosgene, sarin, tabun, chlorine and a number of agents from the mustard gas family.

The report added that North Korea had reportedly provided chemical weapons or technology for chemical weapons to Egypt, Iran, Libya and Syria since the 1990s.

http://www.vancouversun.com/business/fp/yourmoney/North+Korea+uses+prisoners+chemical+ weapons+tests+report/9035115/story.html

Why Syria's chemical deadline won't be met;

By Gordon Lubold

Busting deadline: Why Syria's chemical weapons deadline may never be met. FP's Colum Lynch and Yochi Dreazen:

The Obama administration and its allies are struggling to find a safe place to store Syria's chemical weapons after they've been shipped out of the country, raising new questions about when the U.S. military will actually begin destroying the deadly munitions.

The Organization for the Prohibition of Chemical Weapons has set an ambitious Dec. 31 deadline for Syria to hand over the deadliest of its chemical armaments, which are supposed to be packed into roughly 150 shipping containers, driven to the Syrian port city of Latakia, loaded onto Norwegian and Danish cargo ships and then transported to a location outside of Syria. Once there, they will be transferred to an American vessel called the Cape Ray for destruction. Senior American defense officials stressed Thursday that the Cape Ray itself won't dock at Latakia and that no U.S. personnel would set foot in Syria.

http://thecable.foreignpolicy.com/posts/2013/12/05/its_never_going_to_happ en_why_syrias_chemical_deadline_may_not_be_met#sthash.B60RGWbh.BDNMMgy1.dpbs

Biological Weapons Convention Meeting Concludes In Geneva

16 December 2013

States Parties to the Biological Weapons Convention (BWC) have concluded the 2013 Meeting of States Parties which was held at the United Nations Office at Geneva from 9 to 13 December. The meeting was chaired by Ms. Judit Körömi, Special Representative of the Foreign Minister for Arms Control, Disarmament and Non-proliferation of Hungary, with the support of two Vice-Chairs, Ambassador Urs Schmid of Switzerland and Ambassador Mazlan Muhammad of Malaysia. The meeting brought together nearly 500 participants from 105 countries, including over 200 experts from government agencies and international organizations such as Interpol, the World Health Organization (WHO), the Organization for the Prohibition of Chemical Weapons (OPCW), the International Committee of the Red Cross (ICRC), and the

North Atlantic Treaty Organization (NATO). A range of non-governmental organizations and academic experts also attended the meeting.

Closing the meeting on 13 December, the Chairman expressed her satisfaction with the way the meeting had run during the week: "We had interactive and lively discussions, in a constructive and cooperative manner. Delegations demonstrated both their interest in the topics and their respect for each other, while pursuing common understanding on practical measures to strengthen the operation of the Convention."

The Meeting developed and consolidated the work of the Meeting of Experts (12-16 August 2013), and reached common understandings on:

· International cooperation and assistance – how States Parties can work together to build relevant capacity;

· Ways and means to strengthen national implementation of the convention – how States Parties work domestically to prevent disease being used as a weapon;

· Review of developments in the field of science and technology relevant to the BWC – how States Parties keep up with the rapid pace of advances in the life sciences and their implications for the Convention;

· Enabling fuller participation in the Confidence Building Measures (CBMs) – how States Parties can better exchange information to increase transparency and build confidence in compliance.

On cooperation and assistance, States Parties reached a broad range of new understandings, including on:

· The value of developing and facilitating twinning programmes and other means of international exchange in education and training for capacity building and sharing of advanced expertise and for improving global capacity for disease detection and control;

· The importance of promoting interagency coordination and multi-sectoral cooperation to prepare for, detect, and respond to infectious disease outbreaks;

· The importance of coordination with relevant international and regional organizations and other relevant stakeholders.

The Chair highlighted some key points that were discussed by delegations: "To address the challenges and obstacles to developing international cooperation and assistance, states should pursue a long-term, sustainable and systematic approach. It is also important that requesting countries provide a thorough explanation of their needs and define in specific terms the type of support that could best address those needs."

On developments in science and technology, States Parties reviewed a broad range of developments, identified and discussed those with potential benefits for the Convention and others with potential for uses contrary to the provisions of the BWC. Australia, for example, highlighted the challenges that the world is facing: "it is incumbent on us now to engage critically, creatively and practically with the key challenges confronting the BWC: the realities of rapid scientific and technological developments and the increasing globalization of the biotechnology sector. To address these challenges, we need to forge a new cooperative approach whereby we share our expertise and knowledge, strengthen our approaches to national implementation, and build confidence across regions and blocs, while

harnessing the many benefits for humanity that these science et technology developments bring."

Concepts such as the responsible conduct of science were discussed, as an overarching theme to be promoted in States' efforts on education and awareness-raising about risks and benefits of life sciences and biotechnology. There was a shared recognition of the valuable contribution of associated stakeholders in science, academia and industry to the work of States Parties and the importance of continuing to encourage them to participate in the intersessional programme.

On strengthening national implementation, States Parties demonstrated a willingness to find ways to improve how they work domestically. Delegations shared the view that, while they should take into account differences in national circumstances and legal and constitutional processes, there were many common responsibilities in the area of national implementation. The Islamic Republic of Iran, speaking on behalf of the Group of the Non Aligned Movement and Other States, for example, highlighted that "There are diverse national situations for each of the States Parties but their commitments and obligations under the Convention are the same." The Group also noted that it is important that States Parties continue "...to learn from each other by sharing national experiences in the implementation of the Convention, and to collectively think about ways and means to enhance national implementation, including through regional and sub-regional cooperation".

On the Confidence-building measures, States Parties discussed how to increase participation in the annual exchanges of information and identified common understandings, including:

· The value of regional seminars and workshops to promote awareness of annual exchange of information and to provide an opportunity for States to report on their difficulties and needs for assistance.

· The importance of States Parties actively encouraging those not participating to do so and to share information on the specific reasons on why they do not participate; and

· The possibility of making the annual reports available in more UN languages.

The meeting also considered progress towards universalizaton of the Convention, and welcomed the four new States Parties that joined the BWC in 2013 – Cameroon, Nauru, Guyana and Malawi – bringing the total number of States Parties to 170. The Chairman urged states that are not party to join the Convention, highlighting the role of the BWC as one of the main pillar of the international community's efforts against weapons of mass destruction. Ms. Körömi also encouraged the States Parties to promote the Convention and to provide assistance to states that are trying to join the BWC.

The BWC intersessional programme will continue in 2014. The Meeting of Experts will be held in Geneva from 4 to 8 August 2014 and the Meeting of States Parties from 1 to 5 December 2014. Ambassador Urs Schmid of Switzerland was elected as Chairman of the 2014 meetings, with Ambassador Mazlan Muhammad of Malaysia and Ms. Judit Körömi, Special Representative of the Foreign Minister of Hungary for Arms Control, Disarmament and Non-proliferation, appointed as Vice-chairs.

The Meeting of States Parties is part of a four-year intersessional programme mandated by the 2011 Seventh Review

Conference of the BWC aimed at strengthening the implementation of the Convention and improving its effectiveness as a practical barrier against the development or use of biological weapons. The BWC prohibits the development, production and stockpiling of biological and toxin weapons. More formally referred to as the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, the treaty opened for signature in 1972 and entered into force in 1975. It currently has 170 States Parties, with a further 10 States having signed but not yet ratified.

http://www.unog.ch/80256EDD006B9C2E/(httpNewsByYear_en)/6885FBD958CCE765C1257C430034FBBA?OpenDocument

Book Review

Global Biosecurity: Towards a New Governance Paradigm

Authors:

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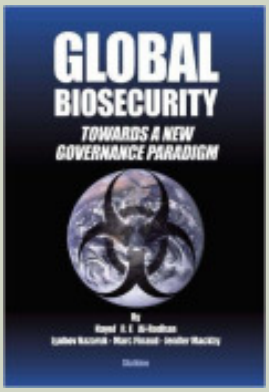
Summary

The rapid scientific advancements of the life sciences, nanotechnology and biotechnology have brought along certain challenges for not only the scientific community but also the policy makers.



In the 21st century, biosecurity has taken an important position in the global policy-making agenda. The rapid scientific advancements of the life sciences, nanotechnology and biotechnology have also brought along certain challenges for not only the scientific community but also the policy makers. Subsequently, challenges of proliferation of biological weapons and bioterrorism have brought forward the need to create a global public policy community to consider these threats as a major global security concern. Given the complexity and multiplicity of the threats related to biosecurity, it is vital to look at these issues through a global perspective and construct a transnational governance system capable of properly addressing the issue. Biological threats and biosecurity loom large as key points of concern for international security in the near future. The dual-use character of materials, the relative ease and availability of agents needed, the high risk of proliferation and the rapidly developing field of biotechnology present a challenge to the international community, calling for a strong institutionalisation of governance policy at the global level, an increased transparency and information sharing and a strong export control regime. Although the Biological Weapons Convention (BWC) has established a foundation for transnational cooperation on biological safety and security, global legislation on these issues is fragmented and inconsistent. It does not address the difficulties and hurdles that stifle international cooperation for creating a global governance regime for biosecurity and biosafety.

Global Biosecurity aims to inform both policymakers as well as the general public on the key developments and trends in the field of biosecurity, giving the reader an insight into not only the technological

advancements but also the diverse aspects of biological threats and risks. It situates biosecurity as a considerable threat to international peace and security, drawing the reader's attention to the multiple discourses of biosafety and biosecurity. It goes on to present an analytical framework and a historical perspective for a better comprehension of the threats and risks it poses to humanity. It also highlights the dual-use nature of technology and the possibility of misuse of life sciences and biotechnology.

As with any other technology, biotechnology has the ability to be both constructive and destructive; it is the intent to use scientific discoveries aimed at bettering humanity for malicious purposes and availability of possibly harmful information that causes the greatest security risk. This also opens up the debate on information sharing and forces us to revisit the idea of openness of scientific information and its close links to national security. This is probably the greatest hurdle in the path for achieving a global governance policy on combating threats of biosecurity. The authors underline the need for global oversight of research and sharing of such 'sensitive' information. Moreover, they address the ethical implications of new technologies and stress for an open dialogue between experts, decision makers and the general public to ensure transparency and accountability and to avoid the misuse of technology.

While offering the reader a detailed analysis of the existing norms for the control of biological threats at both the national as well as the international levels, the authors have also discuss the major multilateral legal instruments like the Geneva Protocol, the Biological and Toxins Weapons Convention, the exports control regime, the G8 Global Partnership and the International Committee of the Red Cross, that aim at controlling and countering the hostile use of biotechnology to create 'weapons of mass effect'. While detailing the various international and national responses to bioterrorism and use of biological weapons, it brings up the various problems faced by governments and international organisations in combating this threat.

The authors conclude by presenting a new roadmap for global biosecurity governance, calling for a deeper understanding and scholarship of the issue. They propose to establish a global biosecurity network (GBN) that could offer effective solutions through active engagement of all important actors from both governments and nongovernmental organisations to private industry, science and academia as well as involvement from the general public. This proposal aims at multi-stakeholder dialogue and the creation of a common understanding to design a global biosecurity strategy to ensure safety and security against biological threats. The authors present simple albeit ambitious proposals for guaranteeing global biosecurity that need to be taken into consideration by the international policy community.

The book not only presents a widespread and well researched review of the various facets of biosecurity, it also outlines the measures taken across the world for countering biological threats and identifies gaps where further action needs to be taken. It puts forward comprehensive recommendations to policy makers for creation of a global biosecurity network and urges collaborative study and analysis for a better understanding of the problems faced by the biosecurity regime. Despite the fact that the proposals offered by the authors seem to be idealistic and ambitious, it would be beneficial for policy makers to use them as a reference point and try implementing them over time. The book is an excellent reference document that could be a tremendous help to academics and policy makers alike.

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